VIRGINIA WILDLIFE

MARCH 2002 TWO DOLLARS

Director's Column

William L. Woodfin, Jr

One of the pleasures of my job is witnessing first-hand on a daily basis the numerous partnerships across the Commonwealth that are working on behalf of our wildlife resources. The Virginia Department of Game and Inland Fisheries was born of a partnership that goes back to 1898 when the Audubon Society of Virginia, the Virginia Division of the League of American Sportsmen, and the Farmers' Union determined a need to preserve wild bird and animal life of the Commonwealth.

Over the years partnerships have directly contributed to successful restoration work and conservation efforts. In recent years our partnerships have led to ground-breaking work with species ranging from wild turkeys to black bears, and from mussels to American shad. With the support of our partners the Department has attained national stature as a wildlife agency.

Recently The Wildlife Foundation of Virginia, which was created to assist in the conservation, protection, and enhancement of wildlife and habitat resources throughout the Commonwealth, recognized the contributions of Dominion Virginia Power, one of the Department's significant partners.

Dominion has participated in such programs as restoring fish passage on the James River, improving wildlife habitat, and most recently bringing back peregrine falcon populations in Virginia through a program called Falcon-Trak.

Not all our partners are corporations or large organizations; individuals also play an important role in preserving and protecting Virginia's natural resources. With this in mind, The Wildlife Foundation of Virginia presented a special conservation award to Moncure Duncan recognizing his leadership in wildlife conservation. Monty Duncan is one of the original founders of the Foundation and has served as past chairman of that organization.

On behalf of the Virginia Department of Game and Inland Fisheries, we want to applaud the recipients of these awards and to extend our sincerest appreciation to all the partners across the state that tirelessly work to raise awareness and appreciation of our wildlife. We thank you.

Sherry Crumley, chairman of The Wildlife Foundation of Virginia, presented the special 2002 Conservation Awards to (left to right) Ed Roach of Dominion Virginia Power and Moncure "Monty" Duncan.

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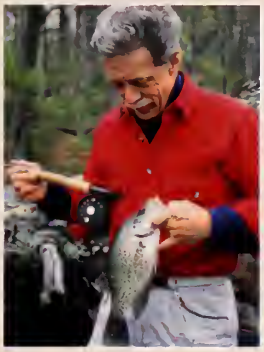

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Cover: Eastern screech-owl *(Otus asio), photo by ©Bill Lea.*

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Dedicated to the Conservation of Virginia's Wildlife and Natural Resources

VOLUME 63 NUMBER 3

The restoration of the American shad in Virginia is slowly showing some promise, as anglers once again cast in hopes of catching this prized fish.

by Dan Genest

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THERE'S in That

Fishing on an outgoing tide on the James River, guide Dale Huggins made a long cast with a small, red fly. "It ought to start any minute," he predicted. The words had hardly left his mouth when his fly line cut an arc through the water.

Huggins' sun-weathered hands reacted in tandem with moves that had been choreographed through decades of fishing—his left hand stripped in line and the right tipped the rod up. At the prick of the hook, a 2-pound hickory shad cleared the water 50 feet downstream.

The fish charged upstream, staying deep. When it neared the boat, it rocketed out of the water, skipped once or twice on its tail and headed back downstream. "I don't think he liked the looks of my boat," Huggins laughed as he landed and released the "tiny tarpon."

While that other river to the north, the Rappahannock, has been getting lots of press for its annual run of hickory shad and the wonderful fly fishery that has developed, Huggins and a few others have discovered that fly-fishing can be just as exciting on the James. The big difference, he said, is it's useful to

Hickory shad by Duane Raver

American shad by Duane Raver

have a boat on the James, but in Fredericksburg you can get to the fish by wading.

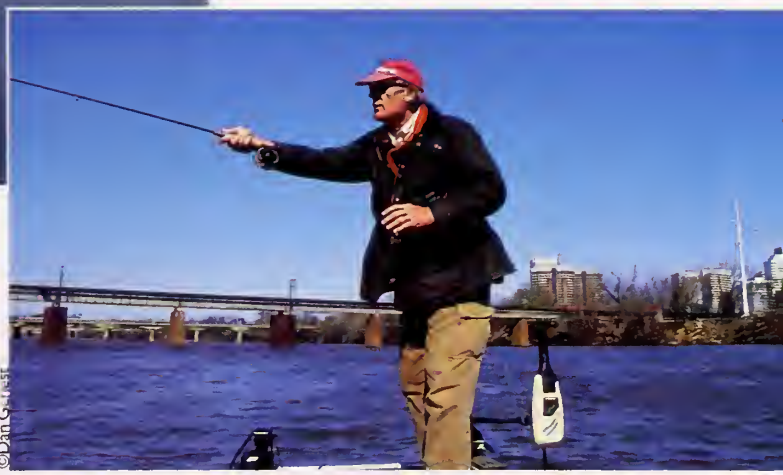
"During the peak of the James' hickory run, 50-60 fish per day is not uncommon," Huggins said.

It Hasn't Always Been This Way

Huggins, who owns Short Pump Outfitters in Henrico County, has fished the changing tides of the James below Richmond for nearly two decades. In that time, he has witnessed the ebb and flow of the shad fishery.

"In the early 80s, fishing was terrific. And then we had some lean times. In the past few years, there have been good runs and not so good runs, but overall the trend seems to be improving," Huggins said.

That is an assessment with which Alan Weaver would agree. Weaver is the Virginia Department of Game and Inland Fisheries' (VDGIF) Bosher's Dam Fish Passage Coordinator and operates and monitors the Bosher Dam Fishway, which opened in 1999. The passage was built to allow American shad to reach their historic spawning grounds west of Richmond. Because



©Dan G. Hurst

Left: As the early morning sun reflects the city skyline of Richmond on the James River, fishing guides Russ Cress and Dale Huggins (above) lay claim to their favorite hickory shad fishing holes.

SILVER

There River

of a series of dams on the James through Richmond, American shad had been denied access to those spawning grounds for more than two centuries. "A decade ago, we were out on the James below the fall line, and we electroshocked up one lone, hickory shad," Weaver said.

"Today," he added, "We have a nice recreational fishery, and I think it is only going to get better." Weaver suspects that the resurgence of the hickory shad may be tied to a 1994 moratorium on harvesting American shad. "Netters used to get a lot of by-catch of big, fat, hickory shad females."

The males or buck hickory shad may start arriving as early as the last week of March. The peak of the run usually stretches from mid-April to early May. "When the bigger females come up, you can have some sort of fun," Huggins said.

A popular stretch to fish is between the Interstate 95 bridge upstream to the 14th Street Bridge in Richmond. Boating access is from Ancarrow's Landing, a VDGIF landing on Maury Street in Richmond.

"At the peak of the runs, there may be a hundred anglers out here fishing for the spring spawners—shad, striped bass, and white perch," Huggins said. "Out of all those boats maybe no more than a half dozen will hold fly-fishermen. The rest of those guys just don't know what they are missing."

Nine-foot fly rods from 3–7 weight and a reel loaded with a sinking line are best for boat fishing. With sinking lines, short leaders of no more than three feet work well. Flies run small, in sizes 8–10. Try patterns tied in red and white, chartreuse and white, or red and chartreuse with gold or silver dumbbell eyes.

Robert Thomas, who works at the Complete Fly Fisher in Richmond, said it is not clear whether shad hit flies because they are hungry or because the flash and color trigger a strike. "What we do know is that they can be awfully finicky. One moment you can be slaying them on red and white and the next they won't touch it. Then a few minutes later, they start hitting chartreuse or white or some other color. Experiment until you find what they want."

Above: Guide Russ Cress feels that, pound-for-pound, catching chunky hickory shad on a fly rod is hard to beat. Right: A good selection of brightly colored, sinking flies is the key to enticing shad to strike during their spring runs. Far right: Winn Will of Richmond warms up with some shad angling action on a cold spring day.

Understanding the Fishing Regulations for Shad

Below the 14th Street Bridge in Richmond, regulations covering all anadromous fish, including hickory shad and American Shad, are set by the Virginia Marine Resources Commission (VMRC). The VMRC has banned the harvesting of American shad, but anglers can still creel hickories. In fact, there is no limit.

Above the bridge, VDGIF sets the limits, and it has ruled that neither American or hickory shad may be creeled.

©Dan Genest

So, below the bridge, anglers need to know how to identify hickories and Americans. Weaver said that on hickory shad, the lower jaw juts out beyond the upper jaw, and the fish are silvery. With American shad, the upper and lower jaws are even, and the fish tend to be white in color. In fact, their other common name is white shad.

All of this may seem a little confusing, but Huggins has a solution that makes it real easy to stay within the law: "Practice catch-and-release on both species." With that in mind the future looks very promising for those who want to tackle these silver-sided treasures. □

Dan Genest is freelance writer and a past winner of the Virginia Outdoor Writer's Association's Excellence in Craft Award. An avid fly fisherman, his articles focus on angling opportunities in Virginia.

American Shad Restoration Sees Slow But Steady Progress

For hundreds of years, American Indians used the blooming of the shad bush to signal the start of the annual spawning run of the American shad, a rite of spring that was once millions of fish strong. Alan Weaver and Tom Gunter don't expect the numbers to be anywhere close to their historical level, but are cautiously optimistic that the spring of 2002 could see more than a 1,000 American shad make their way up the James River past Bosher's Dam.

One thousand American shad—not a very impressive number when compared to historical stocks. Yet, for Weaver and Gunter it would be a milestone worth celebrating, one more positive step in the decade long battle to bring the shad back from the brink and reclaim the glory days when its was the Chesapeake Bay's most important commercial food fish.

As recently as 1995, the number of American shad that made their way to the base of Bosher's Dam could have been counted on one's fingers. That was the year VDGIF began stocking millions of American shad fry in the James above the

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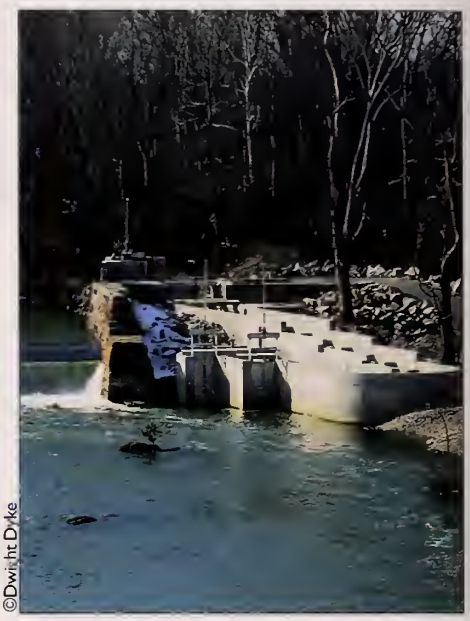

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Above/below: Over the last six years the Department's Shad Restoration Program has included an aggressive stocking program of American shad. With the completion of the Bosher's Dam fish ladder on the James River, shad are now able to swim as far up as Lynchburg.

dam. Four years later the Bosher's Dam Fish Passageway was christened and is designed to allow adults returning from the ocean access to their historical spawning grounds.

Weaver is the Department's biologist who heads up the Fish Passage Project. Gunter, also a fisheries biologist with VDGIF, is the state's American Shad Coordinator and works with Weaver out of the Department's Ashland office. He oversees the taking and hatching of shad eggs in the spring and the stocking of shad fry above the dam.

"It is way too early to claim that shad populations are at a safe level," Weaver said. "But since the completion of the passageway three years ago we have seen the number of fish moving upstream beyond the dam increase each year. We hope this year to see a much larger increase. That would be a good sign that we are moving in the right direction."

In 1999, the first year a count was taken on spawning shad, about 200 American shad went through the passageway. In 2000, the number doubled to 400. Last year the number hit nearly 700.

Gunter said there is good reason to be optimistic about the 2002 spawn. "Our netting program last year, in the tidal stretch of the James below Richmond, yielded more adult American shad than ever. But just as important, we were finding tremendous numbers of stocked juvenile fish that had worked their way down river from above Bosher's Dam where they had been stocked," he said.

What that means is that the state's ambitious stocking program of shad fry above the dam is producing fish that are making their way out to the ocean.

Each year since 1995, about 5 million shad have been chemically marked on an ear bone and then stocked. "By looking at the ear bone, we can tell what river the fish were stocked in," Gunter said. In 2000 and 2001, a handful of wild shad, which lack the ear bone marking were collected upstream of Boshers Dam, indicating successful spawning.

Generally, it takes between four and six years for the stocked shad to make the round trip from the river to the ocean and back. For every 5 million fry, Gunter and Weaver would be happy if only about 12,000 returned upstream.

"This year is the fourth spawning season since the passageway was opened," Weaver said. "We hope to see more of the fish that made it back downstream that first year start to return." □

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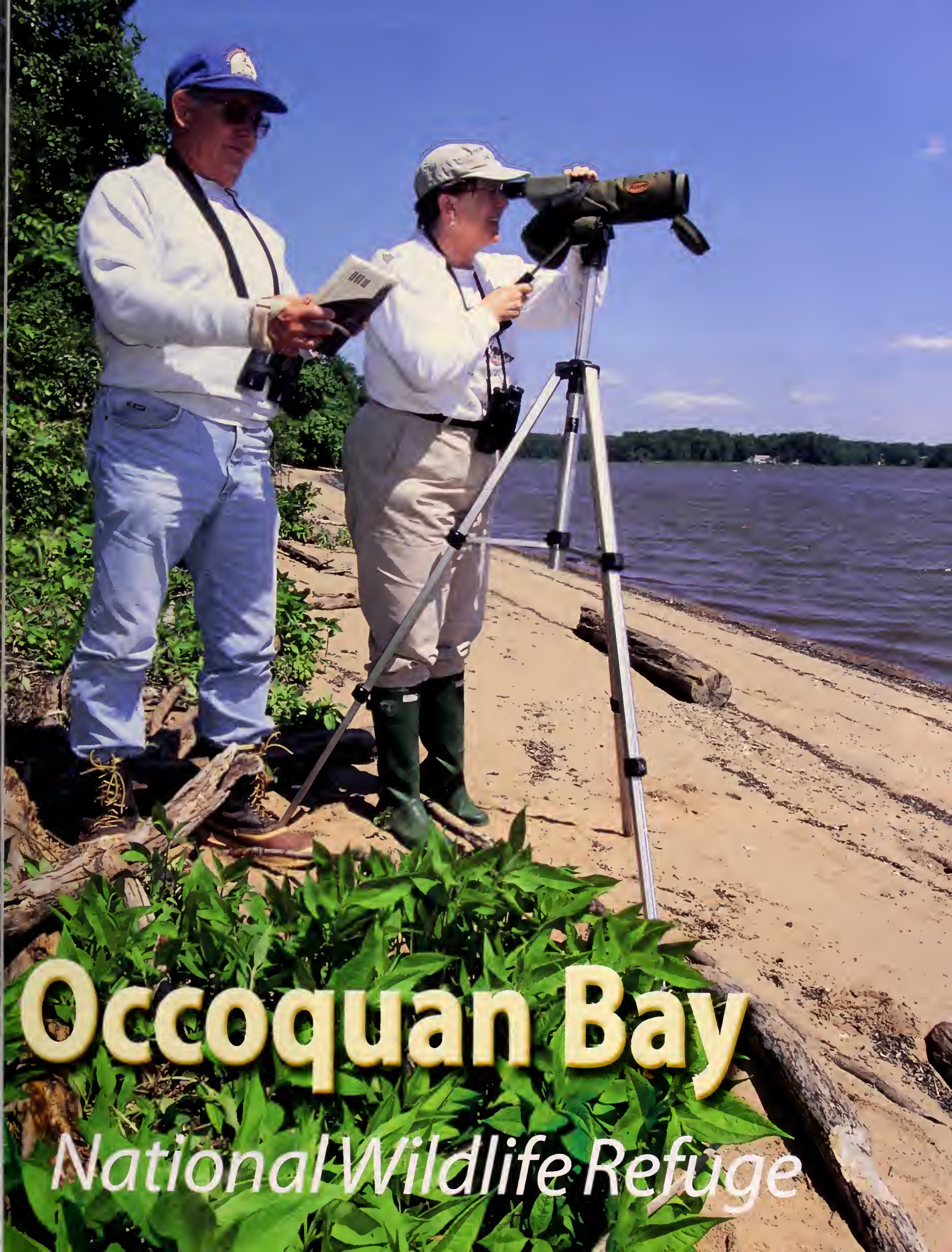

Occoquan Bay

National Wildlife Refuge

A top-secret army research facility gives rise to a wildlife refuge.

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Occoquan Bay NWR has a rich diversity of grass and wetland plant species.

by Steve Mitchell

In 1994, when the U.S. Army shut down its top secret research facility, Harry Diamond Laboratories in Woodbridge, Virginia, the area was contaminated with toxic chemicals and gave no hint of the wildlife refuge it would become. But thanks to the U.S. Army Corps of Engineers and the EPA, the site has been cleaned up and was reopened in 2000 as the Occoquan Bay National Wildlife Refuge. The grassland habitat of the refuge, which is unique for Northern Virginia, is expected to help support migratory and other species of birds as well as other wildlife.

The refuge is located in Woodbridge at the junction of the Occoquan and Potomac Rivers. Bordered by Occoquan Bay on the south and Belmont Bay on the east, the refuge area was used by the Army as a broadcasting site beginning in the 1950s. In the 1970s, the military began using the area as a top secret facility to study the effects of electromagnetic pulses generated by nuclear weapons on communications and other military equipment. The facility was also involved in devel-

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oping "the camouflage used by the troops in the Gulf War," says Yvonne M. Schultz, an outdoor recreation planner at the refuge. Some of the activities carried on by the Army still remain classified.

The military testing left the soil contaminated with heavy metals, pesticides, and polychlorinated biphenyls or PCBs. PCBs, which can be fatal in fish and invertebrates and disrupt food chains, were the main concern because most of the other chemicals were only found at low levels in the refuge. But the site, after an extensive clean up, appears to be none the worse for wear. The U.S. Army transferred 586 acres of the research facility to the U.S. Fish and Wildlife Service at no cost in 1998, and the area now hosts an abundant variety of wildlife.

Remnants of the military operations are scattered around the refuge, including wells, bunkers where some of the testing was conducted, and a thick, concrete foundation of an Army building since torn down. Schultz notes that the Army at one time had Nike missiles, which were capable of carrying nuclear warheads, Russian MiG jets, and Chinese tanks on the site. The U.S. Army Corps of Engineers is still finalizing some of the clean-up effort and some areas in the refuge will continue to be monitored for PCBs, she says.

The Occoquan Bay Refuge represents one of the last, large undeveloped grassland areas in Northern Virginia and U.S. Fish and Wildlife Service officials are hoping that it helps support migrating birds following the Atlantic flyway. Claiming over 600 species of plants and 20 different habitats, the refuge supports over 220 species of birds, Schultz says. "Gamma grasses, a few different kinds of ferns, a fair number of exotic plants, and 40 or 50 different kinds of trees" are among the plant species found on the refuge, she adds. Gum trees are abundant and blue stem grass can also be found here.

The rich diversity of grassland and wetland plant species, which are unusual in the heavily developed Potomac region, host a variety of birds uncommon in Northern Virginia, notes Marty McClevey, another outdoor recreation planner at the refuge. Birdwatchers, he adds, flock to the refuge for the opportunity to see sparrows, meadowlarks, and several hawk species, including Cooper's, sharp-shins, kestrels, and redtails.

White-throated sparrows, indigo buntings, a tremendous bluebird population, bald eagles, ospreys, great blue herons, and warblers also can be spotted on the Refuge, Schultz says. About 2 miles of hiking

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Above: A wide variety of birds and animals like beaver and fox (right) can be seen throughout the refuge.

©Rob & Ann Simpson

An immature, sharp-shinned hawk keeps watch for its next meal.

trails, which are based on the old Army patrol roads, give the public access to the grasslands, marsh, and wet forests in the area. And "birding groups can get permits to enter some of the closed-off areas of the refuge," Schultz notes.

Also found on the square mile of marsh and grasslands that make up the refuge are deer, foxes, raccoons, beavers, and skunks. The deer population was present during the Army days and is now estimated to have expanded to 90 animals, Schultz says. A lottery hunt may be planned to thin out the herd next year, she adds.

The beaver dams may pose a threat to the grassland status of the refuge. The dams, built on creeks and streams in the refuge, are turning more of the area into marshes than Schultz would prefer, and strategies to keep the dams open to minimize the area that is transformed into marshland are being evaluated. In addition, studies to determine the impact the beavers' dam building is having on the tree species on the refuge are also ongoing. If the beavers impact is determined to be detrimental, the beaver population may have to be reduced and managed, Schultz says.

The refuge has also come to be known as a mecca for butterfly enthusiasts because it contains a rich variety of the insects. The area contains "70 to 80 percent of all the butterfly species identified in Prince William County," Schultz says, noting that wildlife studies to identify the types and number of each species are underway.

Jogging and bicycling are not permitted on the refuge because the prey animals tend to associate these activities with predatory behavior, Schultz says. Hunting may be permitted on a limited scale strictly to manage wildlife populations, and a fishing site (that will stretch for a quarter of a mile) is being evaluated for the Potomac River side of the refuge, she notes. A pond located in the refuge is filled with large bass and catfish left over from when the Army kept the water stocked with the fish. The pond may be used as a

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As a young deer stands next to an old Army bunker, visitors to Occoquan Bay NWF are reminded that the area was once an important military facility.

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Birds like the great blue heron (above) and waterfowl like the hooded merganser (left) are just a few of the 220 bird species found on the refuge.

special resource to educate the public, particularly youth, on how to fish, but it won't be open to the general public, Schultz says.

A 2-mile road through the refuge, that will be featured as a wildlife drive, is in development and should be open by spring, 2002, Schultz notes. Other projects include additional trails to give birders access to Marumsco Creek, which affords views of several duck species and Canadian geese in the winter. Because of the many marsh areas and its location at the junction of two bays, the refuge enables visitors to observe both bay and marsh duck species. Redhead, canvasback, ruddy, scaup, and common and hooded merganser are among the more common ducks seen on the refuge.

The Occoquan Bay Refuge will be joined with another wildlife refuge, the 64-acre Marumsco National Wildlife Refuge, yielding a total of 650 acres under protection. The Mason Neck Refuge, which is roughly 90 percent forests, is located just across the Bay and gives wildlife a good contrast from the Occoquan Bay Refuge, which is roughly 90 percent grassland, Schultz says. The Featherstone Refuge is also nearby, located to the south down the Potomac River.

Entrance to the refuge is currently free, but that is scheduled to change to include a nominal fee of no more than $2 per day, Schultz says. USFW passes, such as Golden Eagle and Federal Duck stamps will be accepted at the refuge. For more information, call (703) 490-4979. □

Steve Mitchell is a freelance wildlife writer and photographer. He has a Masters of Science degree in biology and lives in Manassas, Virginia, with his dog Coltrane.

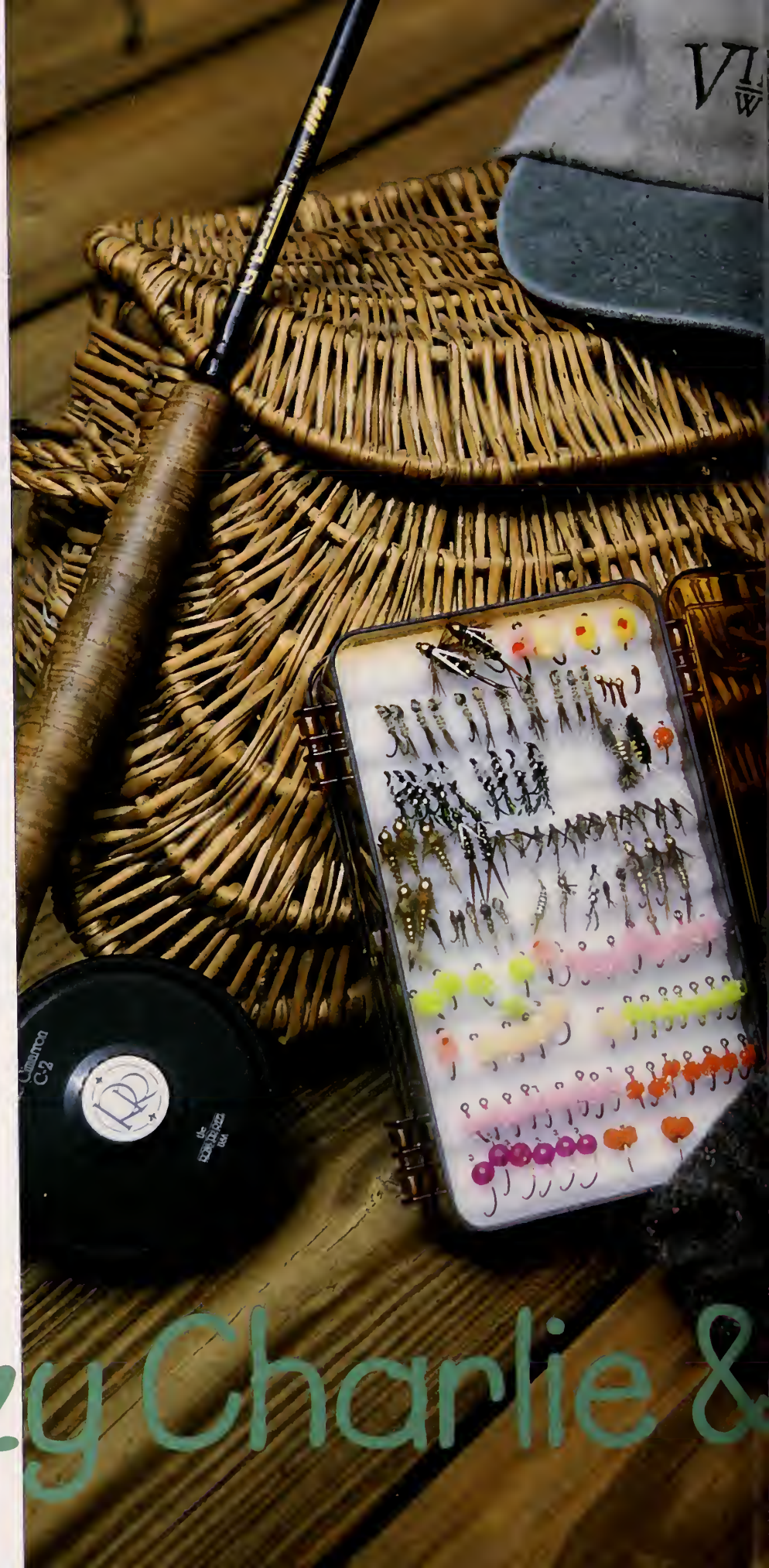
Fly-fishing is a great way to put some punch into your next panfishing adventure.

story and photos by
King Montgomery

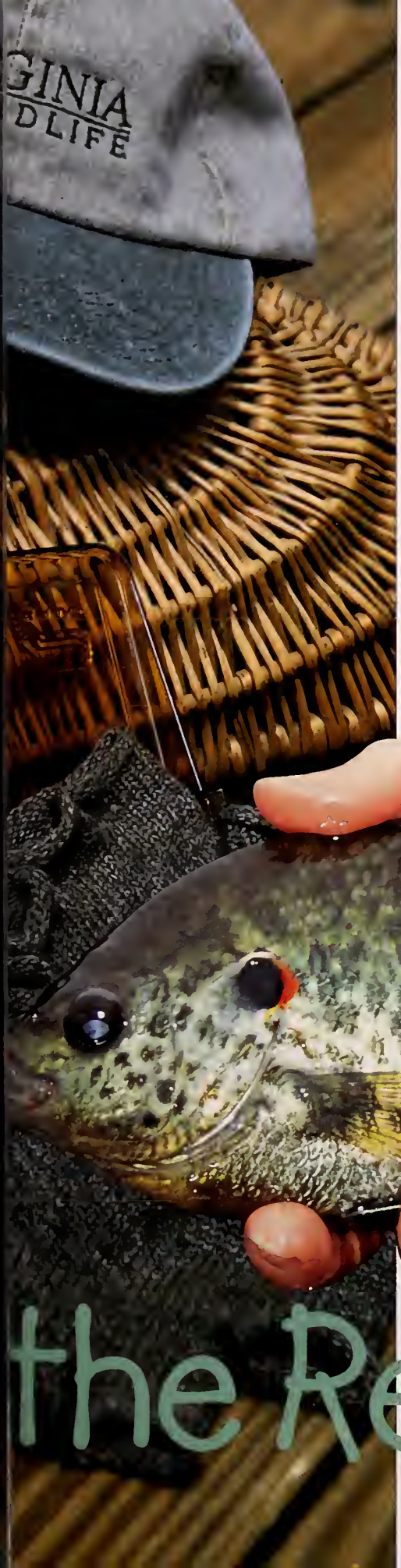
Some flies designed for saltwater fish and many tied for coldwater trout are ideal for catching popular warmwater panfish such as bluegill, crappie, and others. The more seasoned I become, the more I get a kick out of using different flies to catch sunfish in ponds, reservoirs, lakes, and rivers of the Old Dominion. Sunfish are plentiful and fairly easy to catch. Since they have a habit of overpopulating, keep a mess for dinner. Altogether, fly-fishing for panfish is so much fun and has so many advantages; you should try it, or try it again if it's been awhile.

The Flies

The following are some of the more well-known saltwater and trout flies that I have used on panfish over the years: Crazy Charlie, Gotcha, Prince Nymph, Clouser Minnow, Nearnuff Sculpin, Bitch Creek, Greenbutt Skunk, Glo-Bug, DL's Grass Shrimp, Silver Doctor, Green Highlander, Yuk Bug, Mickey Finn, Black Gnat, Woolly Worm, Matuka, Gold-Ribbed Hare's Ear, San Juan Worm, Elk Hair Caddis, Goddard Caddis, Dave's Hopper, and Letort Cricket. Many other dry



Crazy Charlie &



or wet flies, emergers, nymphs, and various saltwater patterns are effective, too, especially those saltwater flies for bonefish and other species with relatively small mouths.

I don't like to use standard trout dry flies for bluegill, redear, and other sunfish, because they are usually taken too deep and get torn up after hooking just a few fish. But more durable dries such as the Elk Hair and Goddard Caddis are usually just as effective, a lot less trouble, and catch a bunch of fish. This is often true during and immediately after mayfly, stonefly, or caddisfly hatches, and when terrestrial insects are plentiful. You don't have to copy the hatching fly precisely; as long as you capture the essence of the emerging fly in very roughly the same size and color, you should score on a rising fish.

These flies could certainly be expanded, but after years of experimenting I have settled on the Clouser Deep Minnow and the Crazy Charlie for crappie. In addition to poppers, the caddisflies, and terrestrial dries, I like Dave Whitlock's Nearnuff Sculpin and the beadhead Prince Nymph for the other sunfish. Clousers tied in sizes 6 and 8 work well for all the panfish and for trout (and anything else) too. If you tie your own, use light wire hooks that will straighten easily when you pull them from a snag. If catch-and-release is your preference, bend down the hook barb.

Flies in Tandem

Like most anglers, I prefer to catch fish on surface flies. But sometimes, particularly during warm summer days after the shade has left the shorelines, below-surface presentations are more effective. For these and situations where I don't know where the fish are or what they are doing, two flies are often better than one. A floating fly/sunken fly tandem al-

Virginia's redear sunfish is also known as a shellcracker because it eats, among, other things, freshwater mollusks.

the Redear

lows me to cover more of the water column, increasing chances of success.

If the floating/sinking combination doesn't work, try two sinking flies of different sizes and patterns. This rig serves as a depth finder and is often taken by panfish on the fall. If the wait for the flies to reach the productive depth is too long, apply a piece of split-shot first, and if that doesn't work well enough, use a mini-sink tip or a sinking tip fly line to get the flies down a little faster. Often, though, the slow fall of the flies on a floating line triggers strikes from finicky or inactive fish.

There are a number of ways to rig tandem flies on a leader, but several of the easiest and most effective ways are as follows: The first is to tie the first fly onto the tippet as usual. Tie on a 12–18 inch piece of tippet material to the hook shank of the lead fly; the line should be the next size lighter than the leader tippet. The second method is to tie the first fly on as usual and tie on a 12–18 inch piece of tippet material to the hook eye of the lead fly. Another approach, one I often use, is to tie on a piece of tippet material and leave a 7 or 8-inch tag. Attach a nymph to the tag and to the end of the tippet.

Equipment

A 9-foot graphite rod for a 2 or 3 weight line works well for the panfish. If you pursue small brook trout in mountain streams, your 7 or 8-foot rod in graphite or bamboo for a 2 or 3- weight is just fine.

Single-action reels with a spare spool or two will suffice. We're not talking about getting run into the backing here, but a word of caution: recently while fishing for crappie with a 3 weight rod, I hooked and eventually landed a largemouth bass near 7 pounds, so be prepared! One spool should contain a good weight-forward floating line and the other spool a mini-sink tip or sinking-tip line.

I like knotless tapered leaders because they are easy to use and more than adequate for the task at hand. Start with a 9-foot leader, it will be 8 feet or less after knotting, and add tippet material during the day as needed. Tippets can test to 8 pounds, but lighter monofilament may be used. The heavier the tippet, the easier it is to retrieve the fly when it becomes snagged. Tippets testing to 6 and 8 pounds are about the same diameter as the 2 and 4 pound tippets of the recent past.

Daily Panfish Behavior Patterns

Early and late in the day in late spring through early fall, the fish will be close to the shore, particularly where aquatic vegetation grows, or brush or fallen trees are present. In spring they are on the breeding beds, usually near the banks in water 2–5 feet deep. They feed on zooplankton, aquatic, and terrestrial insects, and small fish such as minnows or the newly hatched of larger species, including their own kind. Both prey and predator stay near the structure-covered shorelines, particularly when the water remains shaded. Many smaller panfish remain near the shore all day, but the larger ones move to deeper water, usually to the first depth breakline, where they either hug the bottom or suspend in the water column at a comfortable level. Later in the day, as the sun slides low enough below the trees or hills to cast shade over the water along the banks, the nomads return to their shoreline haunts.

Begin the day casting poppers or terrestrials very near the bank as

The author took this assortment of saltwater flies, like Crazy Charlies, to the flats of Mexico's Yucatan for bonefish, permit, and other exotic species. The same flies also work well for Virginia's sunfish.

close as you can get. Vary the retrieve from none at all to very slow with pauses; let the fish tell you how they want the fly. As the sun rises and the surface bite slackens, tie on a sunken fly dropper, work the shoreline, and then gradually work the combination farther out from the banks.

When the shade leaves, cast a Prince Nymph, Crazy Charlie, or other sunken fly to the water near the bank and then work progressively away from it into deeper haunts. Go to two sunken flies and, if you need more depth, add lead or change spools to the sinking-tip line. By early evening, the fish will reverse their commute and head for the shore, so you can resume the same approach that worked in the morning.

Why Bother?

So, why should fly anglers chase the panfish when there are larger, more exotic, more challenging, and more prestigious quarry to pursue? Because, in my view, they are readily available most of the year, they put up a gallant fight for their size, and are a challenge to land on light tackle. As a bonus they'll also provide excellent dinner fare.

Panfish keep us in angling shape during the off-season. Because of their numbers and the relative ease with which they are caught, they are "training wheels" for beginning fly anglers. They also provide a reason for family or friends to get together, to enjoy a bit of nature and each other, and catch a few fish, too.

Have you ever caught a 2-pound crappie or a palm size bluegill on a light fly rod? You won't be at all skeptical about panfishing if you have. So, break out the trout and saltwater fly boxes, select something in sizes 6–10, tie it on, and cast to "America's fish," the panfish. □

King Montgomery chases sunfish all over the Old Dominion and elsewhere. He also uses saltwater flies for trout; but that's another story. An award-winning outdoor writer and photographer, he is a frequent contributor to Virginia Wildlife.

Virginia's

Highland Coun
a sweet mour
attracting outdo
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by Emily M. Grey

At the headwaters of the mighty James River and on North America's Eastern Continental Divide is one of "Virginia's Best Keep Secrets," Highland County. Approximately 4,400 feet above sea level, the area's climate feels more like New England than the Old Dominion.

Cradled in the Allegheny Mountains, Highland County has the highest mean elevation and third lowest population of any other county east of the Mississippi River. With a human population of around 2,500, sheep outnumber people. During the early 20th century the number of inhabitants nearly doubled today's count.

Just getting to the highlands is a navigational feat. From Staunton, take State Road 250 west and be prepared for a slow, winding climb. You will cross the Calfpasture, Cowpasture, and Bullpasture Rivers. Look for other interesting names like Seldom Seen Road, Mustoe, and Possum Trot.

©Emily Grey

Switzerland

's reputation as in paradise is enthusiasts from country.

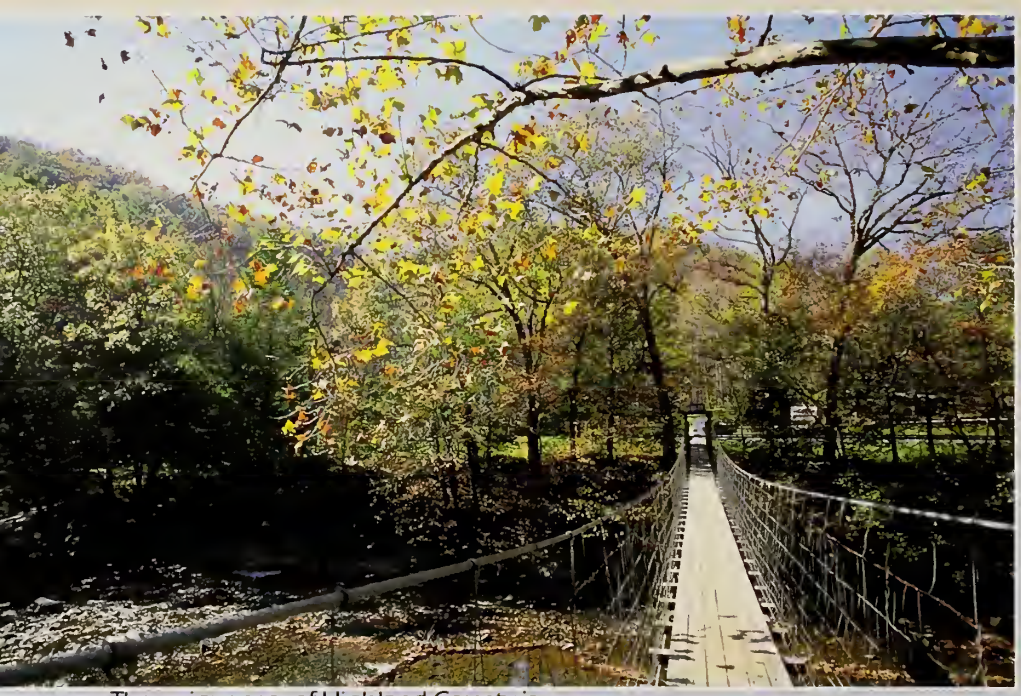
Old country stores and vast undeveloped acres are reminiscent of early America. There are no shopping malls, factories, or serious crime. It is an isolated community with resourceful individuals who represent a vanishing link of America.

This region of Virginia abounds in interesting birds, wildflowers, trees, mushrooms, butterflies, rocks, and mammals. It is home to rare wildlife like the snowshoe hare, golden eagle, Canada mayflower, and an occasional fisher. Some plant species like the dwarf anemone,

If it's trout fishing, hunting for deer, or taking a hike with the aid of llamas, Highland County, is truly an outdoor paradise.

©Dwight Dyke

Ralph D. Hensley



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The uniqueness of Highland County is reflected through its geographical and wildlife diversity. Above: A scenic cable suspension bridge spans the Bullpasture River near Williamsville. Right: One of the counties rare inhabitants is the elusive snowshoe hare.

white-haired leatherflower, and evening primrose reach their southernmost distribution there.

Highland County Wildlife Management Area

Bullpasture Mountain, Little Doe Hill, and Jack Mountain are separate tracts of this 14,283-acre site, owned and managed by the Virginia Department of Game and Inland Fisheries (VDGIF). Oak and hickory fill the woods and bluegrass sod carpet the clearings that comprise this 1,800 to 4,390-foot high range.

Watch for grouse, rabbits, and squirrels from assorted hiking trails. Look for the dwindling Bewick's wren and mourning warblers along brushy edges and variable sedge, documented only at Jack Mountain.

A cable suspension footbridge spans the Bullpasture River at the gorge near Williamsville. Popular among anglers, VDGIF keeps the Bullpasture well stocked with trout. On Route 220, a fish hatchery offers easy angling for youngsters in this "Trout Capital of the Eastern United States."

Deer, turkey, and bear hunting thrive at Bullpasture and Jack Mountains. To enhance natural food and cover, VDGIF plants soft mast like apple, cherry, and dogwood. They also create excellent food sources by seeding logging paths and small openings.

Endless Mountain Retreat Center

On the West Virginia border and about 14 miles west of the county seat of Monterey is Endless Mountain Retreat Center (EMRC) a 560-acre secluded oasis. George Washington National Forest surrounds this haven of tranquil woodlands, fields, and meadows to the east and Monongahela National Forest to the west.

Tom Brody is the owner and founder of EMRC, formerly called Bear Mountain Outdoor School. Since 1988, EMRC has offered custom designed nature programs and mountain culture classes for schools, families, companies, and other groups. Enrollees from all over America congregate at this haven to pursue anything from bee keeping to blacksmithing. College classes conduct biological research on the rare northern flying squirrel and snowshoe hare.

The Allegheny, Appalachian, Blue Ridge, and Shenandoah Mountains present a spectacular panoramic vista. From spacious picture windows or the wrap-around deck of Brody's main lodge, onlookers can watch for resident red-shouldered and red-tailed hawks encircling alpine summits. Birders can spot scarlet tanagers, purple finches, and cedar waxwings through the porch telescope. High above the valley one can listen for and observe rose-breasted grosbeaks, saw-whet owls, and red squirrels. In winter, northern goshawks and rough-legged hawks are amazing sky masters.

©Kraig Haske

©Emily Grey

One autumn, Tom and I hiked across a network of rocks, hay-scented ferns, red spruce, and open space. Red and sugar maples, oaks, and other deciduous forest trees stood majestically along multi-tiered hillsides. Blackberry thickets, black locust saplings, and ghost-gray stumps of early American chestnut trees covered the once cultivated terrain.

Tom explained how mountain farmers had once grown potatoes and corn in the rich rocky loam. We observed a pair of northern harriers hovering over a vast pasture and white-tailed deer grazed near a small stream. Life gets no better than this, I mused. A few years ago, I joined a biology class on a llama trek. Our guide instructed us to watch the llamas: their behaviors would alert us to danger, wildlife activity, and other stimuli.

Snow fell silently as we slowly led the llamas through some wild country. We discovered bobcat, coyote, red fox, and cottontail rabbit tracks. We talked about timbering, sheep grazing, maintaining streams, sugar maple farming, and sustainability. We appreciated the fresh, clean air and free range.

"I have never been led around in the wild before," states John Reavey, a Rutgers student. "It is very relaxing and enjoyable."

©Emily Grey

"This experience means a lot," states Matthew McGuire, another participant. "This place looks like a picture from a book or magazine."

Students from Virginia's prestigious Governor's School have gathered "unto these hills" and received "their good tidings." Meandering trails lead to cryptic glades, spring-fed creeks, and beaver dams. Novices learn to distinguish edibles from poisonous plants and experience hands-on preparation of nature's meals from expert botanists.

Any road you travel in uncommonly beautiful Highland County will yield enchanting vistas. An ancient rugged natural rock formation called Devil's Backbone is located in Blue Grass. Near Trimble's Knob, one can collect fossils and various rocks. The Nature Conservancy of Virginia's 74-acre Laurel Fork Preserve is immersed in northern red spruce habitat. There you may view a rare mayfly, pink-edged sulphur, or spotted Joe-Pye weed. Through grant money the National Park Service will develop the Civil War battlefield at McDowell into expansive hiking and cycling trails. Motorists will receive audio interpretation while driving along a designated route. Portions of the battlefield are currently open to hikers.

The Lodge, at Endless Mountain Retreat Center, offers its guests a spectacular view of the remote mountains of Highland County.

Highland County Maple Festival

There are no busy avenues or crowds in Highland except for the second and third weekends in March. During that time, the renowned Maple Festival in Monterey attracts about 70,000 visitors. This gala is the locality's principal annual economic booster. It has been dubbed one of the "Southeast Tourism Society's Top 20 Events for the past nine years."

Highland County is North America's southernmost producer of maple syrup. Guests are invited to watch the actual syrup-making process. Don't leave town without touring Ivan Puffenbarger's Sugar Orchard on Route 637 toward Blue Grass. Five generations of Puffenbargers have produced maple products from that site. At the local elementary school, students serve buckwheat and plain pancakes saturated with fresh warm maple syrup. "Maple money" buys classroom computers, software, and televisions.

Nearly 200 East Coast artisans and artists display their manifold exhibits at various locations. Ongoing entertainment includes live bluegrass music, children's programs, and wildlife exhibits.

"We were attracted to Highland County because of the hardy, independent community values, pleasant mountain climate, and some of the best scenery in the East," explains Jim White, co-owner of McDowell's Sugar Tree Country Store and Sugar House. "Most people who come here are not interested in changing it."

Natives describe Highland as "a magical little county that's closer to heaven, both literally and figuratively than any other in the state." In this "Little Switzerland," serene, snow-dotted ridge tops with entrancing sunrises and sunsets paint a "picture perfect" setting. There land stewards perceive that "it is important to protect and pass on the genuine goodness of life…to future generations." ☐

Emily Grey is a naturalist, outdoor writer, photojournalist, and attorney from Virginia's Eastern Shore.

©Emily Grey

The Highland County Maple Festival, held in March, draws visitors from around the country.

For more information contact:

Highland County Chamber of Commerce, (540) 468-2550 or www.highlandcova.org.

Endless Mountain Retreat Center, (888) 502-9612 or www.mountain-retreat.com.

Keeping Track: Wildlife on the Move

by Carol A. Heiser
illustrations by Spike Knuth

Longer days, warmer breezes, and the first hint of green on the trees are all end-of-winter benchmarks that have many of us outdoors in the garden, taking walks, or fishing. Observant nature enthusiasts might catch a far-off glimpse of migrating hawks or hear the insistent honking of a flock of geese or swans as they melt away over the horizon on surefire wingbeats. As spring unfolds, all sorts of animals are on the move—some traveling thousands of miles from one continent to another, others traversing only one or two states as they expand their seasonal home ranges. Getting a handle on where all these animals go and how they get there can involve some unusual and sophisticated tracking technology, including radiotelemetry, tagging and monitoring, and bar coding. These state-of-the-art methods help land managers identify crucial habitats and make conservation decisions that work on wildlife's behalf.

Now You See It, Now You Don't

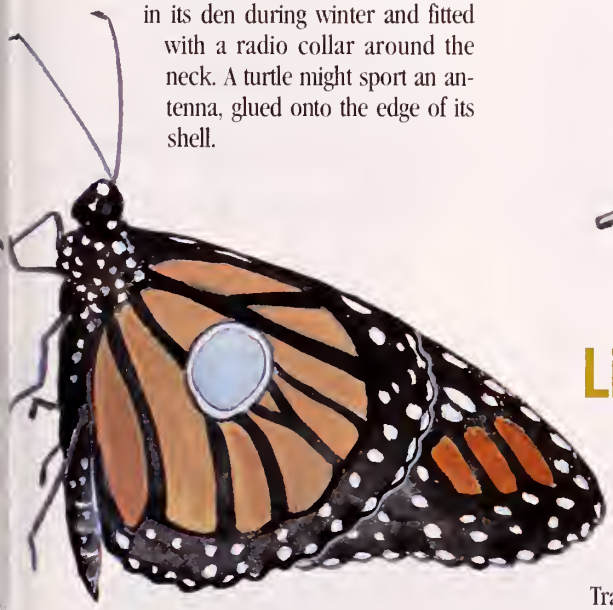
Being able to recognize a few individual animals in a population made up of thousands is the first challenge. After all, how do you **really** know that the hummingbirds which return to your feeder each spring are the same ones that were there last year, if they all look pretty much the same? Biologists use a simple but indispensible method to answer these types of questions, a method known variously as *catch-and-release, tag-and-release,* or *mark-and-recapture*.

The idea is to carefully capture some individual animals without harming them, mark them in some identifying way, and let them go. If enough individual animals are marked and enough people around the world participate in the endeavor, then eventually some of these same animals are caught again, usually in locations far-flung from their original point of capture. Over time, the data collected on these individuals can be used to paint a broader picture of how and where the entire population moves during the course of a season or a year. More importantly, the information reveals valuable insights about the types of habitats that migrating animals depend on as they follow their annual routes like clockwork.

The mark-and-recapture method varies, depending on what type of animal is being studied. For example, the monarch butterfly

Delving into the day-to-day habits of an animal requires a lot of patience and equipment that is specially suited to help track its movement. For example, a black bear (above) is outfitted with a radio collar around the neck, a monarch butterfly (right) has an adhesive sticker placed on the wing, and a wild turkey (below) is implanted with a transmitting device.

is captured with a net and is tagged with an adhesive sticker on its wing. A songbird or hawk is caught in a fine mist net that looks like a badminton net with extra pockets, and the bird is given a loose-fitting, metal ankle bracelet. A snake is caught with a snake hook and pillowcase, then surgically implanted with a transmitter. A bear is anesthetized in its den during winter and fitted with a radio collar around the neck. A turtle might sport an antenna, glued onto the edge of its shell.



Regardless of the species, pertinent data is always recorded whenever an individual animal in a study is caught. Weight, health, sex, age, breeding status, location, and other important details are noted. In this way, the data from one capture can be compared to another.

Listening for Beeps

Tracking wildlife can be done on foot, by plane, with a vehicle, or in the case of satellite telemetry—at one's desktop computer. Traditional *radiotelemetry* equipment requires the use of a *transmitter*—a small, electronic signalling device attached to the animal's body—and a hand-held "black box" (*receiver*) with accompanying *antenna* that's a miniaturized version of TV antennae seen on rooftops. A biologist tracks the marked quarry on foot (see illustration at right) or by vehicle, moving through the study area with the antenna until the receiver picks up the transmitter signal and emits a series of audible beeps. Following the loudest beeps, the biologist can continuously adapt the direction of his tracking until the animal is located.

The Dawdlers—Snakes and Turtles

Using radiotelemetry, you can learn intriguing details about a day in the life of, say, a rattlesnake. Old Dominion University is in the 10th year of its canebrake rattlesnake research in the Chesapeake area. Little was known about this endangered species' movements or habits until about 30 individuals were marked at one time or another over the 10 year period and tracked with between 8,000–10,000 observations. We now know that males have a home range (150 acres) that's twice as large as females and that males move twice as far (only three and one-half miles) within this range during a breeding cycle. The snakes spend an incredible 40 percent of each day lying in wait on the forest floor for prey; their primary food source is the eastern gray squirrel; and an individual snake may eat up to five squirrels in one year, or conversely may go a whole year without feeding. Pregnant females use a much smaller area than non-pregnant females but move around more, frequenting the sunny edges of fields and clearcuts to keep their body temperature high enough for proper egg development. And every once in a while, for reasons we still don't understand, a canebrake will inexplicably pick up and move half a mile, all in one day.

Other curious creatures like the wood turtle are also being studied. The Virginia Department of Game and Inland Fisheries (VDGIF) and George Mason University began a wood turtle study in 1998 in an effort to conserve this state-threatened species, which has experienced significant habitat destruction by commercial and residential development as well as poaching for the pet trade, road mortality, and habitat fragmentation. Radiotelemetry is being used to help determine the turtles' habitat use and movement patterns in urban, agricultural, and forested land-use types.

Long Distance Travelers—Swans and Falcons

A relatively newer method of tracking is *satellite telemetry*. It also uses a transmitter on an animal but relies on a satellite to do the tracking. At any given moment, the monitoring person can pinpoint the exact coordinates of the marked animal's location. Satellite monitoring works well for large animals that travel great distances.

Satellite telemetry is useful for monitoring the movements of wildlife that travel great distances, like swans (above) and peregrine falcons (right). Swans equipped with small satellite transmitters have been tracked as far away as Alaska, while peregrine falcons have been tracked on their fall migration to Florida, and even the Dominican Republic.

In February of 2001, VDGIF captured two tundra swans at the Hog Island Wildlife Management Area and in Essex County and outfitted them with satellite transmitters. Twenty other swans were equipped with radio transmitters, and 100 more with identifying neck collars. Over 9,000 tundra swans winter in eastern Virginia along the major rivers and the Eastern Shore, and they journey north to the Canadian

tundra in spring to breed. The **radio** transmitters will help determine the swans' **local** movements and the habitat types they use while they're in Virginia for the winter. The **satellite** transmitters will track the swans' migration back to Canada. The first year of the *SwanTrak* data has already revealed that Virginia tundra swans follow migratory routes that are distinctly different from their cousin swans that winter in North Carolina. Wetlands and lakes in the prairie pothole regions of North America are also clearly implicated as crucial stopover habitats.

FalconTrak is another Department project designed to shed light on the migratory habits of the peregrine falcon, a state threatened species. Sixteen peregrines were fitted with satellite transmitter vests in the spring and summer of 2001. Four have survived as of this writing, and of these, three migrated in the fall to South Carolina, Florida, and the Dominican Republic. Plans this year are to outfit additional peregrine fledglings (young birds) with transmitters to see if these results will be consistent from year to year.

Fish with a Bar Code

How do you keep track of a wriggling fish on the move? By using the same technology common at your local grocery store. Biologists implant a tiny wire that contains a *bar code* beneath a fish's skin. The binary wire code is a unique identifier that indicates the date, body of water, and other particulars about where the fish was initially marked and released. At a later date and location, researchers collect fish in nets and scan them with a "wand" that beeps when it registers a bar code signal in a marked fish. This method is just one tool being used by the Department to restore the American shad, an *anadromous* or migratory fish, that spends part of its life in the ocean and then returns upstream to breed in freshwater rivers. Results of the study thus far have guided the construction of fish passageways through obstructions like Bosher's Dam on the James River and other tributaries important to the shad's migration.

Learning More…

- See SwanTrak and FalconTrak at the Virginia Department of Game and Inland Fisheries Web site: **www.dgif.state.va.us**. A classroom activity on SwanTrak for grades 4-8 is also available.
- Bog Turtle Survey of Three Lakes Nature Center in Richmond, Virginia **www.fwie.fw.vt.edu/VHS/bog_turtle.htm**
- Radiotelemetry at the Smithsonian's Conservation and Research Center in Front Royal, Virginia, **www.si.edu/crc/rp/rp_nature/rp_eco/tele/rp_tel.htm**

Carol Heiser is a Wildlife Habitat Education Coordinator with the Virginia Department of Game and Inland Fisheries.

Virginia Naturally

©Dwight Dyke

from her fiancé. This was her first time sleeping in a cabin and learning canoeing, archery, and ATV training. She highly recommends bringing a friend who can share in these experiences. Juliana Fehr, wished her son, from their Berryville home, could have been with her to share her varied experiences, especially the ecology sessions. She attended the wilderness survival session where she learned the essentials of shelter building, fire making, and water filtering. Another memorable experience for Juliana was "bonding" and socializing with other women.

BOW

Creating a Challenge for

by Margaret Mi

"I gained confidence in trying something I never ever thought I would try," says Joan Earyes of Fairfax Station, about her returning that summer to Becoming an Outdoors Woman®, (BOW), an outdoor education program sponsored by the Virginia Department of Game and Inland Fisheries. Joan was referring to the ATV training session she attended where she learned how easy it was to maneuver an ATV. The June weekend for "women only" took place at the Holiday Lake 4-H Center near Appomattox last summer. Several other women were returnees, like Barbara Hall from Millboro, who previously attended BOW with her daughter. Barbara echoes her favorable impression of the program by describing how she learned to use a drill to make a bat house and two bird nesting houses at the woodworking session. "All the instructors are good," reiterates Barbara, "I am looking forward to new session offerings next summer."

Last summer's BOW weekend has special meaning for Nancy Chambers of Norfolk. Her weekend experience was a birthday present

©Dwight Dyke

Above: Two very popular programs offered at the Becoming an Outdoors Woman® events are the shooting sports, and learning the finer culinary tips of cooking in the outdoors.

"Instructors were knowledgeable and enthusiastic," says Linda Benda of Warrenton. One of her sessions was a trail walk where instructors identified plants and their uses. Because she enjoyed the BOW weekend so much and gained confidence in her ability to tackle new projects, Linda later attended an all-day workshop with the Wild Turkey Federation. Linda, along with other women who attended the weekend program, admitted that their BOW weekend campout was not like camps they experienced as kids. In fact, they all agreed that the food was unexpectedly superb and there were no early wake-up calls or curfews.

Having camp cooks was a major motivator for me to enroll in the weekend program. This was a time to get away from my household responsibilities and work pressures. A weekend "retreat" in the outdoors,

©Dwight Dyke

©Dwight Dyke

Top: Learning the art of camping in the great outdoors doesn't mean you have to rough it. Above: If you like being around water then canoeing, kayaking, and fishing are the perfect ways to soak up some fun.

like when I was a kid, appealed to me for nostalgia reasons. As the weekend approached, though, I felt that I would not be able to go because I had so many things to do. But, I needed time to myself and needed to prove that I could still row a canoe and shoot an arrow using a bow. I am pleased that I was able to keep the canoe upright and that I actually hit the Styrofoam animals that were positioned in the woods for bow hunting practice. I, too, gained confidence from revisiting former sports activities of my youth and learning new gardening hints for attracting wildlife. The "all-you-can eat" gourmet food was not at all what I had experienced at my many camps in my youth. The seafood night menu offerings were on par with seafood restaurants in any beach community. I am inviting my sisters and my mother to go with me next year. This time together without the pressure to excel in any of the sessions will be a welcomed retreat from the highly structured conferences I usually attend. □

Dr. Margaret Mi is an Associate Professor in the Business Administration Department at Mary Washington College, Fredericksburg, VA, and has spoken about and written numerous professional articles concerning "Telecommuting." Dr. Mi is an avid reader of Virginia Wildlife *magazine, and is a first-time contributor.*

The next Becoming an Outdoors Woman® program will be held April 26–28, at Hungry Mother State Park, Marion Va. For more information call (804) 367-6351 or visit the Department's Web site at www.dgif.state.va.us.

Journal

VDGIF 2002 Calendar of Events

April 20–21: *Women in the Outdoors*, Front Royal, Va. For information, contact Carissa Lee at (804) 367-6351 or vawildernesswomen@hotmail.com

April 26–28: *Becoming an Outdoors Woman®*, Hungry Mother State Park, Marion, Va. For information call (804) 367-6351.

May 2–5: *Birds and Blossoms*, Norfolk Botanical Gardens. For information call (757) 441-5838.

August 2–4: *Mother & Daughter Event*, Holiday Lake 4-H Educational Center, Appomattox, Va. For information call (804) 367-6351.

September 7: *Women in the Outdoors*, Izaak Walton League, Centreville, Va. For information, contact Linda Layser at (703) 425-6665 or rglayser@msn.com.

September 13-15: *Wilderness Survival Weekend*, Lake Robertson, Lexington, Va. For information call (804) 367-6351.

September 21: *Virginia Outdoors Day*, Belle Isle State Park, Warsaw, Va. For information call (804) 367-6351.

October 18-20: *Virginia Outdoors Weekend*, Westmoreland State Park, Montross, Va. For information call (804) 367-6351.

December 13–14: *Beyond BOW Women's Deer Hunt*, York River State Park, Williamsburg, Va. For information call (804) 367-6351.

Book Review

by Bruce Ingram

Far Appalachia
Following the New River North
by Noah Adams, 2001,
Delacorte Press, hardcover,
238 pages, $23.95.

Even if you have paddled the New River from where it begins in the mountains of North Carolina, followed its path across Southwest Virginia, and then rafted the waterway across West Virginia to where it unites with the Gauley to form the Kanawha, you probably have not experienced the stream like Noah Adams did in his book, *Far Appalachia Following the New River North*. That's because Adams, the host of National Public Radio's *All Things Considered*, explored the New not only by canoe and raft but also by foot, bicycle, and car, taking time to learn about the region's history, people, and small towns along the way.

Come with Adams as he visits Dave and Betty Martin who spend every summer on Snake Mountain in North Carolina where the North Fork of the New begins, bubbling up from springs at an altitude of 4,700 feet. The only light the Martins view at night is 30 miles away across the Virginia border on Mount Rogers.

Let Adams take you back to the old mill town of Fries where for generations indigent workers labored to make the Fries family rich. And learn how the corporation paid the laborers in company script, so that they could purchase goods in the local drugstore, hardware store, furniture store, and other businesses, all owned by the family.

Imagine the sounds of the annual Galax Fiddler's Convention as the author brings you along on a visit to that Southwest Virginia institution. Hear the stories of the so-called hillbilly musicians that journey down from the mountains above the New River, and learn where the roots of the word hillbilly come from over 300 years ago.

Course through the Class IV and V rapids of the New River Gorge in West Virginia as Adams experiences the true meaning of adrenaline rush. And, finally, read the poignant story of how an extraction company knowingly sent men to their deaths, deep into the bowels of the Mountain State's Gauley Mountain to move rock and mine silica. And how 764 men died from silicosis contracted because of the mining process.

Although I have paddled the entire length of the New in North Carolina and the two Virginias, Noah Adams showed me a side of the river that I know little about. This is a book that both river and history enthusiasts should equally enjoy.

Contact Delacorte Press at 800-726-0600 or **www.randomhouse.com**. ☐

Free Fishing Days Date Correction

The Free Fishing Days listed in the 2001/2002 *Virginia Wildlife* Calendar (June 7, 8, and 9) are incorrect. The correct dates are May 31–June 2, 2002. We regret the error.

written and illustrated
by Jennifer Worrell

Be Careful What You Say...

Biologist Larry Hart tells a story that occurred years ago about the new manager at the Brookneal Striped Bass Hatchery and his eagerness to show a local newspaper reporter his operation. First, he showed the reporter how male and female striped bass were collected from the Staunton River. He then explained how the fish were given hormones to cause them to spawn in large circular tanks. He concluded by telling the reporter that millions of eggs hatched after the spawning and the young fish were raised to stocking size. He also told the reporter about a recent survey of the Smith Mountain Lake area that indicated these fish, raised for mere pennies, netted the region millions of dollars each year when fishermen arrived, willing to spend generously in search of the largest bass.

The young manager's excitement abated when the article came out the following week. He called his supervisor, expecting to be fired. The headline read, "Fish Brothel Nets State Big Bucks." □

A Fish in the Hand is Worth Two in the Boot

Game warden Phil Townley was doing surveillance on a stocked trout stream one very hot day when he saw a man catch his limit of trout,

continued fishing, and then slipped two extra fish down into his waders. Townley dispatched another game warden unit in the area to check the man, so he could maintain his secret post. The other unit questioned the surprised angler, who denied catching more than his limit of trout. The game warden radioed Townley, who told them to ask the gentleman to remove his boots. The man sat down in the dirt, pulled off his sweaty waders, and produced two beautiful trout that fell in the dust.

"You got me," the fisherman grudgingly admitted.

Townley stated later, "As hot as it is I guess he wanted to broil his trout first." □

Navigating Virginia With Topographical Maps

by Jerry Uhlman

Hikers, hunters, fishermen, mountain climbers, and other outdoors enthusiasts often use topo maps to find their way through unfamiliar places, and it's common to find a large, red *DeLorme Atlas & Gazetteer* among their prized gear. Now, DeLorme and Maptech, another outdoors mapper, have produced high tech versions of topos on handy CDs. With either version you can easily prepare maps on your PC at home and print the exact area that you want. Both have handy toolbars to customize your topos.

DeLorme's high tech maps are on six CDs, called 3-D TopoQuads. The software is loaded with features. With TopoQuads, moving your mouse across a map will give changing elevations and latitude and longitude. You can download weather bulletins and warnings of highway construction. Best of all, you have 3-D views with a mouse click and easily get directions between specific points on any route you care to plot. The CDs ($99.95 for all 6) are available at their Web page www.delorme.com/ or by mail at DeLorme, Two DeLorme Drive, P.O. Box 298, Yarmouth, ME 04096, telephone (800) 335-6763.

Maptech's version of state topos, called Terrain Navigator (TN), has a better layout and is easier to install and run than Delorme's software. With TN, you can put two maps side-by-side on the screen with one mouse click, and easily mark and measure distances across terrain. The variety of zoom levels give crisp detail no matter what setting, and TM's multi-tasked toolbar makes customizing a map is a simple task. Maptech's five CDs for Virginia sell for $49.95 each, but a package covering Virginia and adjacent states is available for $149.95. The CDs can be purchased online at www.maptech.com/index.cfm or by mail at Maptech, Inc., 10 Industrial Way, Amesbury, MA 01913, telephone (888) 839-5551.

Another topo option is to use USGS maps of Virginia at an online Internet Web site sponsored by Beartooth Mapping, Inc. At www.mytopo.com you can pick a specific area and one of three scales, but it's not possible to plot routes or customize the map. The water-proof topo maps are available by credit card for $14.95 each. □

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On The Water

by Jim Crosby, Region 4 Boater Education Coordinator

Something New For Virginia Boaters

Virginia's Boater Education Program has adopted a new training course for boaters. Titled "Boat Virginia," the new course offers a full-color textbook produced with the latest technology. The skills and information are presented in an efficient, eye-catching manner that makes learning easy and fun.

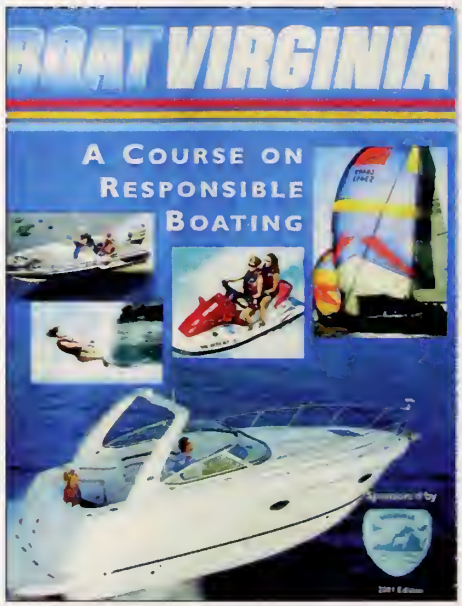
The best part of the program is that it is entirely free when offered in the classroom by a state certified instructor. The course is taught in an eight-hour session that can be presented in one day or broken into several days or evenings. Each chapter in the text is accompanied by a color, sound, and live action video that offers charts, graphs, and illustrations in addition to the action scenes designed to present the information for best possible retention.

What can you learn from the new Boat Virginia course? You can learn everything you need to know to fully enjoy your boating activities in a legal and safe manner.

Under the subject of General Boating, the course covers a discussion of the legally required safety equipment. It explores all the different types of personal flotation devices (life jackets), their proper use, and carry / wear requirements in Virginia.

Through a full discussion, the course offers a good understanding of the navigation rules, navigation lights, nighttime navigation, and marker buoys.

For trailer sailors, the course offers a good foundation for trailering and launching your watercraft. Did you know you should hook your trailer to the tow vehicle with two lengths of chain crossed like an "X" in addition to the hitch?



The proper techniques and equipment for anchoring your vessel are illustrated and discussed in a graphic and informative manner for a good, clear understanding.

Recognizing that personal watercraft (PWC) are very popular among recreational boaters, the course covers their legal use, as well as the how and why of their operation. PWCs are those small vessels that use an inboard engine powering a water jet pump as its source of propulsion. The PWC is designed to be operated by a person or persons sitting, standing, or kneeling on the vessel rather than sitting inside.

Boat Virginia discusses the environmental concerns of boaters and boating. Steps to prevent pollution, erosion of shorelines, and cross contamination of vegetation and marine life are discussed.

Other special boating topics such as sailing, water-skiing, and use of tow toys and devices are also covered in the course presentation.

Most importantly, the course is approved by the National Association of State Boating Law Administrators and is recognized by the U.S. Coast Guard. It meets all of Virginia's legal requirements and is produced and distributed by Boat Ed of Dallas, Texas, under contract to the Virginia Department of Game and Inland Fisheries.

Boat Virginia is also available for home study and distance learning. While it denies the boater a chance to interact with an instructor, distance learning does make the course available to those who cannot attend a live classroom presentation. The home study course comes with a textbook, video, and exam. You must complete the exam and return it for a certificate.

For additional information on Boat Virginia courses and classes, you can contact the Virginia Department of Game and Inland Fisheries' Boater Education Office by calling 804-367-1125 or on the Web at www.dgif.state.va.us. □

RECIPES

by Joan Cone

When The Shad Bush Blooms

As March arrives and the shad bush blooms, it is time for a shad or shad roe dinner. For the past several years, fishing for American shad has been banned in Virginia to allow undisturbed spawning. The smaller hickory shad are legal and offer delicious smaller roe.

Do not despair, as American shad are available from neighboring states and can be purchased at supermarkets and seafood dealers. American shad usually weigh from 3–5 pounds. The roe can be bought separately. If this is too expensive, you can buy both hickory shad and herring roe.

Menu

Shad On The Grill
Packet Red Potatoes
Lemony Spiced Carrots
Mother's Angel Berry Pie

Shad on the Grill

1 (3 to 4 pound) American shad, cleaned and scaled
Salt
Lemon slices
Paprika

Preheat grill. Tear off a large piece of heavy duty aluminum foil, large enough to cover entire fish. Spray foil with nonstick cooking spray. Place shad on foil and salt cavity, if desired. With a sharp knife, make slits part way through the side of the fish. These slits allow oil to seep out during baking. The slits can then be used after cooking for cutting shad into serving pieces. Place a slice of lemon in each slit and sprinkle top of fish with paprika. Bring up sides of foil and double fold. Double fold ends. Place fish on the grill about 3 inches from the coals for 15 to 20 minutes on each side. When the shad is done, discard skin and cooked lemon slices. Serve with fresh lemon wedges. Serves 4.

Packet Red Potatoes

These potatoes can cook on the grill along with the fish.

1 sheet (18x24-inches) heavy duty aluminum foil.
1 small onion, thinly sliced
4 medium red potatoes, cut into bite-size pieces
2 tablespoons olive or vegetable oil
Salt and pepper to taste
½ teaspoon dried dill weed

Spray foil with nonstick cooking spray. Center onion on foil and layer potatoes evenly on top of onion. Drizzle with oil. Sprinkle with seasonings. Bring up sides of foil and double fold. Double fold ends to form one large foil packet, leaving room for heat circulation inside packet. Grill 15 to 20 minutes in covered grill. Serves 4.

Lemony Spiced Carrots

1 pound carrots, cut in ¼-inch slices
2 tablespoons butter or margarine, softened
1 tablespoon sugar
1 teaspoon fresh grated lemon peel
1 tablespoon fresh squeezed lemon juice
4 whole cloves

In saucepan, cook carrots in ¾ cup water until just tender (10 to 15 minutes); drain. Add remaining ingredients and heat, stirring occasionally. Serves 4.

Mother's Angel Berry Pie

Whenever my mother asked our children which dessert they would like, it was always her Angel Berry Pie!

6 egg whites or 6 Egg Beater Whites
¼ teaspoon salt
2 cups sugar, divided
1 tablespoon vinegar
1 teaspoon vanilla
1 cup heavy whipping cream
Fresh strawberries

In a large bowl, beat egg whites with salt until stiff. Add one cup sugar to beaten egg whites at full speed of mixer. Then add second cup sugar, using low speed of mixer, alternately with vinegar. Add vanilla. Sprinkle a 10-inch pie plate with confectioner's sugar. Pour meringue mixture into sugared pie plate, piling higher in center. Bake 1 hour in a preheated 300° F. oven. Let pie cool—it will fall somewhat. Whip cream and spread, gently, over baked meringue. Cover top with sliced fresh strawberries. Do not cover with whipped cream and fruit until just before serving, since meringue pie should not be placed in the refrigerator. Serves 8 to 10. ☐

Wild Backyard

story and photos by Marlene A. Condon

Let Some "Weeds" Grow

One year a few plants came up on their own in my yard. As is my custom, I let them grow because I did not recognize them (this is how I learn my wildflowers). Floral structure is the key to identifying plants, but I did not notice the blooms (they were very tiny in size) on these plants that first year. However, I did notice red admiral and eastern comma butterflies around much more often and more regularly than ever before, and it seemed as if there was almost always a red admiral resting on those unidentified plants!

The mystery plants came up again the next year, covering a bit larger area, and again attracting these two kinds of butterflies. At this point I suspected that my patch must contain food plants for their caterpillars. I checked the enigmatic plants every day until the plants flowered in July, at which time I immediately got out the wildflower guides to identify them. They were called "false nettle," but they belonged to the Nettle Family, the plants, which serve as host plants for red admiral and eastern comma butterfly larvae.

A great spangled fritillary finds a great deal of nectar at Indian hemp (Apocynum cannabinum) flowers.

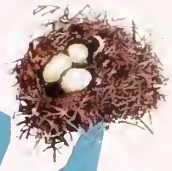
A tiger swallowtail finds sustenance at the early-blooming gill-over-the-ground (Glechoma hederacea).

During the first winter I had the false nettles in my yard, I also discovered American goldfinches loved the seeds of these plants. I had let the false nettle go to seed because every year I allow all of the plants in my yard to set seed and remain standing. I can then observe which animals make use of these food sources so that I can subsequently provide for wildlife. Tall plants are especially important because they often remain standing above snow cover with their fruits or seeds exposed, making food available even in times of harsh weather.

A red admiral caterpillar on a false nettle (Boehmeria cylindrica) plant will find plenty to eat.

So the moral of this story is, let some of the "weeds" that appear unexpectedly in your yard grow to maturity. You might even plant some "weeds" yourself (common milkweed will bring in monarch butterflies). When you find that new guests are visiting your yard, you just might realize that one man's "weed" is another man's "prized flower"! ☐

Naturally Wild



story and illustration
by Spike Knuth

Wood Frog
Rana sylvatca

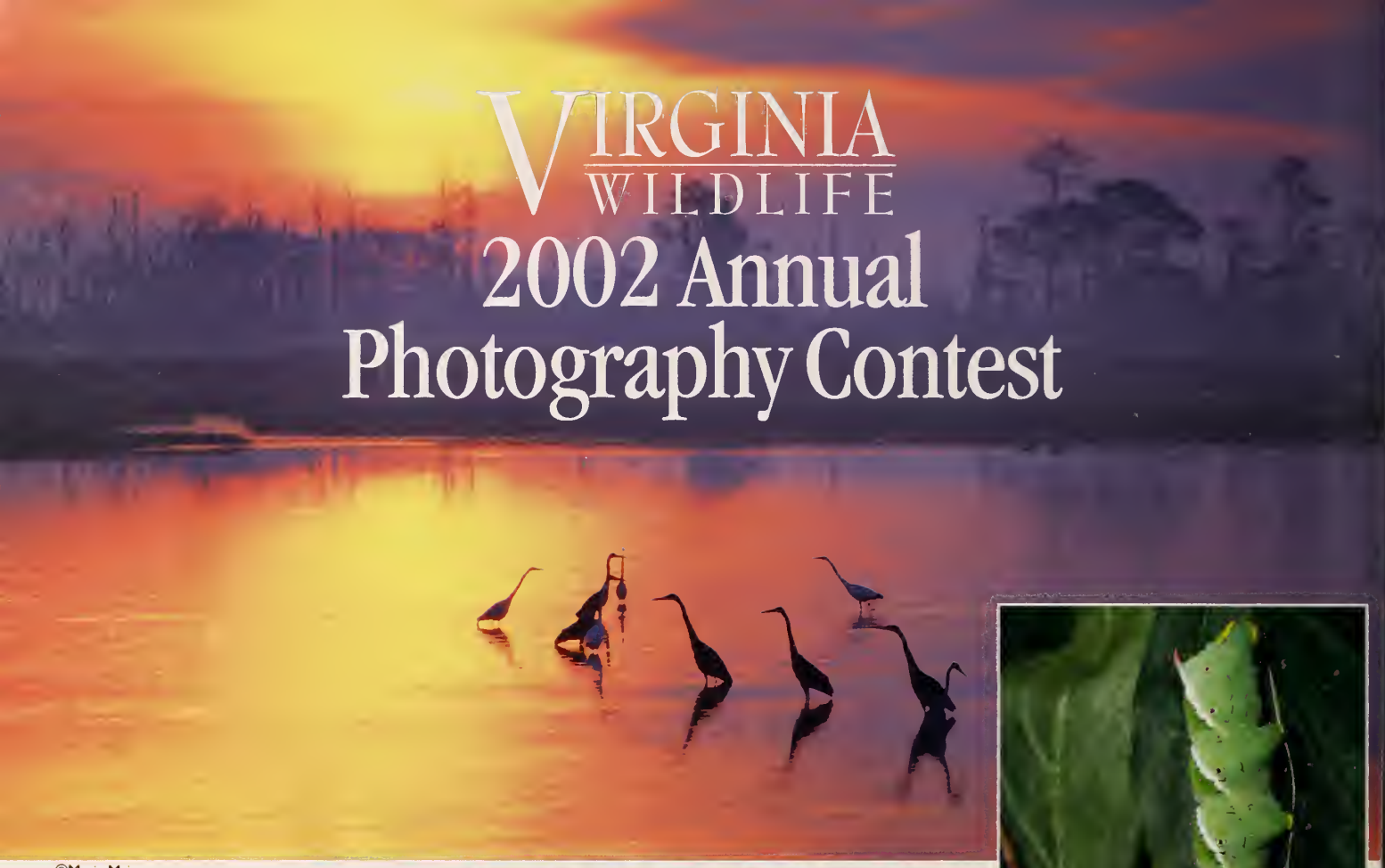
The wood frog is a wisp of an amphibian, measuring only 2 to 3 inches long, the female being larger. They live in the shade of the moist woodlands of oak and pine. They vary in color from dark brown to buff to gray, occasionally spotted or with barred legs. A dark band of black or dark brown just behind the ear is a good field mark. They have long legs in comparison to their bodies and are able to jump farther than most frogs. Wood frogs feed on insects and actually stalk them, much like a toad.

The wood frog is one of the first frogs to awaken from its winter sleep. With the first warming rays of sunshine, it crawls out from under forest debris. The male utters a hoarse, croaking call that has been likened to the quacking of a duck! It calls only during breeding, which ends about the first part of May.

With the first days in the 40–60 degree range, wood frogs seek out puddles, small pools or ponds in the woods, or adjacent fields. Masses of eggs are laid in shallow water and many attach to twigs or grasses or just fall to the bottom. The masses measure 4–5 inches in diameter. Even a quick freeze at this time will not kill the eggs. They will just continue their development when it warms again. The masses contain from 1,000–3,000 eggs each.

After awhile the masses spread and flatten out on the surface, close together and become green in color, resembling pond scum. The color is caused by microscopic plants that feed on the carbon dioxide given off by the now hatching and breathing tadpoles. The plants, in turn, give off oxygen to help the tadpoles breath. The eggs hatch in 9–10 days, and the tadpoles are black in color. By late June, ponds and puddles are full of small wood frogs, still showing partial tails. □

VIRGINIA WILDLIFE
2002 Annual Photography Contest



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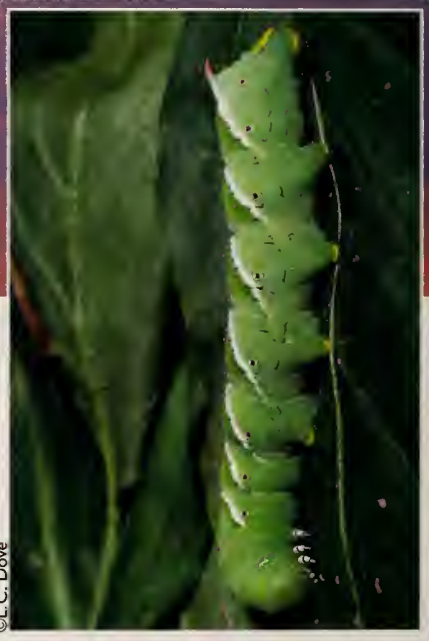

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Picture it! By entering this year's *Virginia Wildlife* magazine's 2002 Photography Contest you could find your photograph published in one of the best wildlife magazines in the country.

This year's contest will have three categories for you to enter, Birds of a Feather, Cold and Clammy Critters, and Fantastic Flowers. First and second place winners in each category will receive prizes donated by the Eastman Kodak Company. Third place winners will receive prizes from Richmond Camera. On top of that, winners of the 2002 contest will have their photographs published in the January 2003 issue of *Virginia Wildlife* magazine for all to see.

For additional information and contest rules send a self addressed, stamped envelope with 34 cents postage to: *Virginia Wildlife* Photography Contest, 4010 West Broad St, P.O. Box 11104, Richmond, VA 23230-1104 or see our Web site at www.dgif.state.va.us. Deadline for contest submissions is October 26th, 2001. Good luck and have fun.

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